

MEMORANDUM

SUBJECT: Endangered Species Act Considerations for the EPA's Approval of Revisions to Colorado WQS in Regulation 32 and 36

Adopted by the Colorado Water Quality Control Commission on August 6, 2018

FROM: Johanna Miller, Director
Clean Water Program

TO: The File

DATE:

This memorandum documents the U.S. Environmental Protection Agency Region 8's (EPA) determination that its decision to approve revisions to Colorado's WQS (WQS) adopted by Water Quality Control Commission (Commission) on August 6, 2018 pursuant to Clean Water Act (CWA) Section 303(c), subject in part to completion of Endangered Species Act (ESA) consultation with the U.S. Fish and Wildlife Service (the USFWS or the Service), is consistent with Section 7(d) of the ESA. This memorandum also discusses the bases for the EPA's conclusions that approval of certain revisions will not cause impacts of concern to federally-listed endangered or threatened species or their designated critical habitat, and approval of other revisions is not subject to ESA consultation either because the EPA does not have discretion to alter its action based on listed species and/or designated critical habitat information or because the action does not affect listed species and/or designated critical habitat.

Section 7(a)(2) of the ESA requires federal agencies, in consultation with the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) and/or the USFWS, to ensure that any action they authorize, fund or carry out is not likely to jeopardize the continued existence of federally-listed threatened or endangered species, or result in the destruction or adverse modification of designated critical habitat of such species. 16 U.S.C. § 1536(a)(2). Consistent with relevant implementing regulations, Section 7 requirements only apply to actions in which there is discretionary federal involvement or control. 50 C.F.R. § 402.03. Also, under the regulations, consultation is only required for actions that "may affect" listed species or critical habitat. 50 C.F.R. § 402.14. Consultation is not required where the action has no effect on such listed species or designated critical habitat.

I. BACKGROUND INFORMATION AND RATIONALE

The WQS revisions addressed in this letter include site-specific changes to water quality standards for several of Colorado's basin-specific regulations (Regulations 32 and 36). The adopted new and revised water quality criteria that are the subject of the action are scientifically defensible, well supported by the record and consistent with CWA requirements. A detailed rationale for EPA's proposed action is included in the action letter.

The EPA's approval of Colorado's WQS is, in part, subject to Section 7(a)(2) consultation requirements under the Endangered Species Act (ESA). Section 7(a)(2) of the ESA states that "each federal agency ... shall ...insure that

any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined to be critical..." However, certain parts of the approval of the new or revised WQS will have no effect on listed or proposed, threatened, or endangered species, or are otherwise not subject to ESA consultation. For these actions, no consultation with the U.S. Fish and Wildlife Service is required.

The EPA has a duty under CWA Section 303(c) to complete its WQS action in a timely manner. In acting on the state's WQS today, the EPA is fulfilling its legal obligations under this provision of the CWA. In addition, there is a practical benefit to the environment associated with timely completion of this action. This will facilitate effluent limits for CWA Section 402 National Pollutant Discharge Elimination System (NPDES) permitting, identification of impaired waters and timely development of CWA Section 303(d) total maximum daily loads (TMDLs). The EPA has concluded that there is an overall benefit to the environment associated with timely approval, prior to completion of ESA consultation, of the WQS.

The EPA's approval decision is consistent with ESA Section 7(d) because it does not foreclose either the formulation by the Service, or the implementation by the EPA, of any alternatives that might be determined in the consultation to be needed to comply with Section 7(a)(2). The EPA retains the full range of options available under CWA Section 303(c) for ensuring WQS are environmentally protective. The EPA can, for example, work with the state to ensure that the state revises its WQS as needed to ensure protection of listed species or initiate rulemaking to promulgate federal standards to supersede the state's standards. See CWA Section 303(c)(4) and 40 CFR § 131.21. The EPA's approval action, therefore, is neither irreversible nor irretrievable. In addition, the EPA does not believe there will be impacts of concern to listed species or their designated critical habitat during the period prior to the conclusion of ESA consultation.

II. LISTED SPECIES AND DESIGNATED CRITICAL HABITAT

Table 1 below provides the list of threatened, endangered (T&E) and candidate species known to occur or expected to occur in Colorado. Regarding aquatic and aquatic dependent species, critical habitat has been designated in Colorado for bonytail chub, Colorado pikeminnow, humpback chub, razorback sucker, southwestern willow flycatcher. In addition, critical habitat has been proposed for the (aquatic dependent) yellow-billed cuckoo.¹

Table 1: Threatened, endangered and candidate species (T&E) known to occur or expected or occur in Colorado.

Status	Common Name (Scientific Name)
Aquatic	
E	Chub, Bonytail (<i>Gila elegans</i>)
E	Chub, Humpback Entire (<i>Gila cypha</i>)
C	Darter, Arkansas (<i>Etheostoma cragini</i>)
E	Pikeminnow, Colorado Entire, except EXPN (<i>Ptychocheilus lucius</i>)
C	Snowfly, Arapahoe (<i>Arsapnia arapahoe</i>)
E	Sturgeon, Pallid (<i>Scaphirhynchus albus</i>)
E	Sucker, razorback Entire (<i>Xyrauchen texanus</i>)
T	Trout, Greenback Cutthroat Entire (<i>Oncorhynchus clarki stomias</i>)

¹<http://ecos.fws.gov/ecp/>

Status	Common Name (Scientific Name)
Aquatic Dependent	
E	Crane, Whooping (<i>Grus americana</i>)
T	Cuckoo, yellow-billed Western U.S. DPS (<i>Coccyzus americanus</i>)
E	Flycatcher, southwestern willow Entire (<i>Empidonax traillii extimus</i>)
T	Plover, piping except Great Lakes watershed (<i>Charadrius melodus</i>)
E	Tern, least interior pop. (<i>Sterna antillarum</i>)
Terrestrial	
E	Mouse, New Mexico meadow jumping (<i>Zapus hudsonius luteus</i>)
T	Mouse, Preble's meadow jumping wherever found (<i>Zapus hudsonius preblei</i>)
E	Butterfly, Uncompahgre fritillary Entire (<i>Boloria acrocroma</i>)
E	Ferret, Black-footed (<i>Mustela nigripes</i>)
T	Lynx, Canada Contiguous U.S. DPS (<i>Lynx canadensis</i>)
T	Owl, Mexican spotted Entire (<i>Strix occidentalis lucida</i>)
T	Sage-grouse, Gunnison entire (<i>Centrocercus minimus</i>)
T	Skipper, Pawnee montane Entire (<i>Hesperia leonardus montana</i>)
T	Beardtongue, Parachute (<i>Penstemon debilis</i>)
E	Beardtongue, Penland (<i>Penstemon penlandii</i>)
T	Bladderpod, Dudley Bluffs (<i>Lesquerella congesta</i>)
T	Cactus, Colorado hookless (<i>Sclerocactus glaucus</i>)
E	Cactus, Knowlton's (<i>Pediocactus knowltonii</i>)
T	Butterfly plant, Colorado (<i>Gaura neomexicana</i> var. <i>coloradensis</i>)
T	Ladies'-tresses, Ute (<i>Spiranthes diluvialis</i>)
T	Cactus, Mesa Verde (<i>Sclerocactus mesae-verdae</i>)
C	Milkvetch, Chapin Mesa (<i>Astragalus schmollii</i>)
E	Milkvetch, Mancos (<i>Astragalus humillimus</i>)
E	Milkvetch, Osterhout (<i>Astragalus osterhoutii</i>)
C	Milkvetch, Skiff (<i>Astragalus microcymbus</i>)
T	Mustard, Penland alpine fen (<i>Eutrema penlandii</i>)
T	Orchid, Western Prairie Fringed (<i>Platanthera praeclara</i>)
T	Phacelia, DeBeque (<i>Phacelia submutica</i>)
E	Phacelia, North Park (<i>Phacelia formosula</i>)
E	Skyrocket, Pagosa (<i>Ipomopsis polyantha</i>)
T	Twinpod, Dudley Bluffs (<i>Physaria obcordata</i>)
E	Wild buckwheat, clay-loving (<i>Eriogonum pelinophilum</i>)

ENDANGERED (E) - Any species that is in danger of extinction throughout all or a significant portion of its range.

THREATENED (T) - Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

CANDIDATE (C).

Below we provide a brief summary of the occurrence, habitat needs, and critical habitat designations for the listed aquatic and aquatic-dependent species. The species-specific information was primarily obtained from the U.S. FWS species profile pages available on ECOS.²

² <http://ecos.fws.gov/ecp/>

Aquatic Species

Arapahoe Snowfly (Candidate)

The final petition to list the Arapahoe Snowfly as an endangered species was published in 2011. The insect is a winter stonefly (family Plecoptera) which generally require cold, clean, and well oxygenated streams. The Arapahoe snowfly is known historically only from two small tributaries of the Cache la Poudre River in the Front Range of Northern Colorado: Young Gulch and Elkhorn Creek in the Canyon Lakes Ranger District of the Roosevelt National Forest. However, new surveys completed in 2013 and 2014 post fires and floods identified the Arapahoe snowfly in seven new localities, including Elkhorn Creek, Sheep Creek (a tributary of the Big Thompson River), Central Gulch (a tributary of Saint Vrain Creek), and Bummer's Gulch, Martin Gulch, and Bear Canyon Creek (tributaries of Boulder Creek in Boulder County).

Matheson et al (2010) states that "The species and its restricted habitat are at serious risk from several anthropogenic threats, including: intensifying recreational use in and around the species' habitat; grazing adjacent to Elkhorn Creek; timber and forest stand management practices impacting the riparian zone of Elkhorn Creek; management actions for the mountain pine beetle (*Dendroctonus ponderosae*) infestation in Roosevelt National Forest, including pesticide application close to water bodies connected to Elkhorn Creek; dewatering; sedimentation and runoff from roads and trails; and seepage from residential and destination resort septic systems. Additional threats are posed by hydrologic changes that are expected to be exacerbated by global climate change."

Arkansas Darter (Candidate)

The Arkansas darter's range includes sites in extreme northwestern Arkansas, southwestern Missouri, and northeastern Oklahoma, within the Neosho River watershed. In Colorado, the species is found in the Upper Arkansas, Fountain Creek, Horse Creek, Upper Arkansas at John Martin, Big Sandy Creek, Rush Creek, Black Squirrel Creek and Chico Creek drainages (Baca, Bent, Cheyenne, Crowley, Elbert, El Paso, Fremont, Huerfano, Kiowa, Los Animas, Lincoln, Otero, and Prowers counties). Their distribution has not changed significantly based on comparisons of historic data, particularly since 1979. The Arkansas darter prefers shallow, clear, cool water, sand or silt bottom streams with spring-fed pools and abundant rooted aquatic vegetation. During late summer low-water periods when streams may become intermittent, Arkansas darter populations in Colorado persist in large, deep pools.

Arkansas darters may spawn throughout spring and summer. Spawning takes place in shallow water over a bottom of coarse gravel. Darters are sexually mature in one year or less. Eggs are usually deposited in open areas, on organic material that covers a sandy streambed.

Threats to the Arkansas darter include stream dewatering resulting from groundwater pumping in the western portion of the species' range, and potential development pressures in portions of its eastern range. These conditions can be exacerbated by localized drought. Spills and runoff from confined animal feeding operations also potentially affect the species range-wide.

Bonytail Chub (Endangered)

Historically, the bonytail chub was reported as widespread and abundant in rivers throughout the Colorado River basin. The fish presently occurs in the wild by only a low number of old fish (i.e. ages 40 years or older), and recruitment is virtually nonexistent. In the Lower Colorado River basin, a small population exists in the Colorado River in Lake Mohave. In the Upper Colorado River basin, there have been captures from Dinosaur National Monument on the Yampa River, Desolation and Gray Canyon on the Green River and Black Rocks and Cataract Canyon on the Colorado River.

The bonytail chub is adapted to the main stem of rivers. It has been observed in pools and eddies and appears to prefer eddies, pools, and backwaters near swift currents in large rivers. Spawning has never been documented in a river but it has been reported that spawning occurs in June and July at water temperature of about 64 degrees F. Bonytail chub are opportunistic feeders eating insects, zooplankton, algae, and higher plant matter.

Portions of the Colorado, Green, and Yampa Rivers in the Upper Colorado River basin and the Colorado River in the Lower Colorado River Basin were designated as critical habitat for the bonytail chub in 1994. These designated segments total 312 river miles. Of the total mileage, 59 miles occur in Moffat County, CO on the Yampa River from the boundary of Dinosaur National Monument to the confluence with the Green River. Water depletions from any portion of the occupied drainage basin are considered to adversely affect or adversely modify the critical habitat of the endangered fish species, and must be evaluated with regard to the criteria described in the pertinent fish recovery programs.

Humpback Chub (Endangered)

The present distribution of the humpback chub includes: 1) Little Colorado River, AZ; 2) Colorado River in Marble and Grand Canyons, AZ; 3) Colorado River in Cataract Canyon, Garfield and San Juan counties UT; 4) Colorado River in Black Rocks, Mesa County CO and Westwater Canyon, Grand County UT; 5) Green River in Desolation and Gray Canyons, Carson and Uintah counties UT; 6) Green River in Dinosaur National Monument, Moffat County CO, and Uintah County UT; and 7) Yampa River in Dinosaur National designations Monument, Moffat County CO. In addition to the counties of present distribution, the humpback chub is also listed as endangered in Mesa and Saguache counties CO.

Critical habitat for the humpback chub is designated for portions of the Colorado, Green, and Yampa Rivers in the Upper Colorado River Basin and the Colorado and Little Colorado Rivers in the Lower Colorado River Basin. The designated reaches total 379 river miles. Of the total mileage, 59 miles occur in Moffat County CO. Water depletions from any portion of the occupied drainage basin are considered to adversely affect or adversely modify the critical habitat of the endangered fish species, and must be evaluated with regard to the criteria described in the pertinent fish recovery programs.

Humpback chub are found in a variety of habitats including pools, riffles, eddies, boulder-strewn canyons, rocky runs, rapids, and travertine dams. This diversity of habitat use suggests that the adult fish move between habitats presumably in response to seasonal habitat changes and life history needs. Reduced spring peak flows, availability of shoreline eddy, and deep canyon habitats and competition and predation by nonnative fish have been reported as potential limiting factors for humpback chub in the Yampa River. Various studies have indicated that humpback chub spawn generally in May and June at water temperatures ranging from 52 to 73 degrees F. They are generally bottom feeders that feed on diatoms as well as small invertebrates such as planktonic crustaceans. They also have been observed feeding on terrestrial invertebrates such as adult mayflies and Mormon crickets.

Colorado Pikeminnow (Endangered)

Natural populations of the Colorado pikeminnow are restricted to the Upper Colorado River Basin in WY, CO, UT, and NM. While they have been reintroduced in several areas, the pikeminnow appears to be extirpated in the wild from all AZ waters, except above Glen Canyon Dam in Lake Powell. The Colorado pikeminnow is believed to or known to occur in Delta, Garfield, Mesa, Moffat, Montezuma, Rio Blanco, Rio Grande, and Saguache counties, CO. Critical habitat for the Colorado pikeminnow has been designated in portions of the Colorado, Green, Yampa, White and San Juan Rivers in the Upper Basin. The reaches total 1,148 river miles. Of the total

mileage, 362 of these miles occur in Delta, Garfield, Mesa, Moffat, Rio Blanco counties CO. Water depletions from any portion of the occupied drainage basin are considered to adversely affect or adversely modify the critical habitat of the endangered fish species, and must be evaluated with regard to the criteria described in the pertinent fish recovery programs.

Colorado pikeminnow are adapted to rivers with seasonally variable flow, high silt loads and turbulence. Young-of-year, juveniles, and subadults live in shallow backwater waters with little or no current, over silt and sand bottoms. Adults are larger river fish found in a variety of depths and velocities over silt, gravel, and boulder substrates depending upon season, streamflow water temperature and availability. Studies have shown that spawning migrations in the upper Green River basin were initiated at water temperatures between 57-68 degrees F and spawning occurred at temperature between 59-82 degrees F while migrations were initiated in the Yampa River from May 12 to June 10 with water temperature of about 57 degrees F and spawning occurred at 70 degrees F. Other studies found that spawning occurred between late June and mid-August when water temperature reached 64-77 degrees F. Food of young Colorado pikeminnow consists mainly of zooplankton and insect larvae. Juvenile and adults feed almost exclusively on other fish, both native and nonnative, although they will eat animals other than fish when the opportunity arises.

Greenback cutthroat trout (Threatened)

Historically, the greenback cutthroat trout is the only trout endemic to the headwaters of the South Platte and Arkansas River drainages within Colorado and a small segment of the South Platte drainage within WY. The exact historical distribution of the species is not known. The greenback is listed as threatened in Boulder, Clear Creek, Custer, Delta, Douglas, Eagle, El Paso, Garfield, Grand, Gunnison, Huerfano, Lake, Larimer, Mesa, Montezuma, Montrose, Ouray, Park, Pitkin, Pueblo, Routt, and Summit counties CO. Greenback cutthroat trout require clear, swift-flowing mountain streams with cover such as overhanging banks and vegetation. Riffle areas are used for spawning. Juveniles tend to shelter in shallow backwaters until large enough to fend for themselves in the mainstream.

The decline of the greenback cutthroat trout is attributed to anthropological influences leading to habitat loss, modification, water diversion, water pollution, and sedimentation. However, the major factor in the decline of the greenback cutthroat was the introduction of nonnative salmonid species (rainbow trout, brook trout, brown trout and Yellowstone cutthroat trout), within the South Platte and Arkansas River drainages. No critical habitat designations have been published for the greenback cutthroat trout.

Pallid Sturgeon (Endangered)

The historic range of the pallid sturgeon included the Missouri River and the Mississippi River downstream of the junction with the Missouri River. The pallid sturgeon experienced a dramatic decline throughout its range since the mid to late 1960's. The pallid sturgeon was listed as an endangered species throughout its range on September 6, 1990 (55 FR 36641 36647). Within its historic range, the pallid sturgeon has been restricted due to major alterations of natural river dynamics through channelization and the construction of dams, dikes and levees. The species decline corresponds with commercial harvest and extensive developments on both the Missouri and Mississippi Rivers that have resulted in habitat modification, reduced normal fish migration patterns, and reductions in water quality, including dissolved oxygen and temperature. These disturbances are believed to have reduced available spawning grounds for a species which only spawn every 2 to 3 years. The pallid sturgeon is an opportunistic feeder which consumes primarily aquatic insects, but also crustaceans, mollusks, annelids, eggs of other fish as well as smaller fish.

The pallid sturgeon is not known to occur in CO and only needs to be considered if water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. Critical habitat has not been designated for the pallid sturgeon due to insufficient data on the areas critical to its survival.

Razorback Sucker (Endangered)

The razorback sucker was once widely distributed and abundant in the mainstem and the major tributaries of the Colorado River basin including the Colorado, Green, and San Juan River basins in the Upper Colorado River Basin. In the upper basin, adults and larvae are widely distributed in the green River basin. The largest concentration in the upper Green River is in a reach that extends from the mouth of the Duchesne River upstream of the lower 4 miles of the Yampa River. A small reproducing population of razorback suckers exists in the Lower Green River. Although the species regularly occurs in the lower Yampa River, it is rarely found upstream as far as the Little Snake River. In the upper Colorado River, most razorback suckers have occurred in the Grand Valley in CO. They also have been captured in the mainstem Colorado River downstream of the Green River confluence including Cataract Canyon and in Lake Powell. The razorback sucker is listed as endangered in Delta Garfield, Mesa, Moffat, Montezuma, Rio Grande, Saguache counties, CO.

Critical habitat has been designated for portions of the Green, Yampa, Duchesne, Colorado, White, Gunnison and San Juan rivers in the Upper Colorado River Basin. In the Lower Colorado River Basin, portions of the Colorado, Gila, Salt and Verde rivers are designated. The designated reaches total 1,724 river miles. Of these miles, 217 miles occur in Colorado.

Razorback suckers in the Green River basin spawn in the spring with rising water levels and increasing water temperatures. They move into flooded areas in early spring and begin spawning migrations to specific locations as they become reproductively active. Spawning occurs over rocky runs and gravel bars. In non-reproductive periods, adults occupy a variety of habitats including impounded and riverine areas, eddies, backwaters, gravel pits, flooded bottoms, flooded mouths of tributary streams, slow runs, sandy riffles, and other habitats. Most studies indicate that the larvae prefer shallow, littoral zones for a few weeks after hatching and then disperse to deeper waters. Their diet varies depending on life stage, habitat and food availability. The diet of adult razorback suckers consists primarily of aquatic insects along with algae, detritus, and inorganic material. The diet of reservoir-dwelling adults is dominated by planktonic crustaceans as well as some algae and detritus.

Aquatic-dependent Species

Whooping Crane (Endangered)

Whooping cranes presently exist in three populations: the historic Aransas-Wood Buffalo population; an experimental population of released non-migratory birds in central Florida; and another experimental population of migratory birds which were led the fall of 2001 by ultralight aircraft from Necedah National Wildlife Refuge in Wisconsin to Chassahowitzka National Wildlife Refuge in Florida. The Wood Buffalo population migrates from Canada primarily through northeast Montana, North and South Dakota, Nebraska, Kansas, Oklahoma, and Texas wintering along the Texas coast. The Whooping Crane is known to fly through Montana during both spring and fall migration. Many of the recorded observations in the state indicate spring migration dates beginning as early in the year as April and fall departure dates occurring as late as the end of October. The July 2010 total wild population was estimated at 383 and the total wild and captive whooping cranes was estimated at 535.

Whooping cranes require open exposed wetlands, prairie potholes, or freshwater marshes. They seek shallow lakes and lagoons containing small islands of cattails, bulrushes, and sedges. They are omnivorous birds with a

diet of insects, crustaceans, small mammals, frogs, and berries. Their diet is often supplemented with roots and grains from fields adjacent to wetlands.

Only experimental populations of whooping crane are known to occur in CO. The whooping crane only needs to be considered if water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. The final critical habitat rule for the whooping crane was published in the May 15, 1978 Federal Register and included designations in Colorado, Idaho, Kansas, Nebraska, New Mexico, Oklahoma, and Texas; however the CO designations were not recognized by the 2016 IPac Trust Resources FWS Report (US FWS 2016).

Yellow-billed cuckoo (Western U.S. DPS, Threatened)

Yellow-billed cuckoos are riparian obligate species that forage primarily on large insects in the canopy. Caterpillars are their primary prey, yet their diet can be supplemented with beetles, ants, spiders, cicadas, katydids, and crickets, and even frogs and lizards. In summer and fall, cuckoos forage on small wild fruits, including elderberries, blackberries and wild grapes. In winter, fruit and seeds may become a larger part of the diet.

The western distinct population segment of the yellow-billed cuckoos were listed as threatened in 2014 (70 FR 59992, October 3, 2014). The historic distribution of the western yellow-billed cuckoo included riparian habitat from to British Columbia to central Mexico. The yellow-billed cuckoo is listed in 26 counties on the Yampa, Colorado, Gunnison, Rio Grande, and Dolores river basins (western half of CO). Critical habitat designations were proposed for the yellow-billed cuckoo in 2014 and include riparian areas along portions of the following CO waterbodies: Yampa, Colorado, North Fork Gunnison, Uncompahgre, Gunnison, Rio Grande and Conejos rivers, however the designations have not been finalized.

Primary stressors that have contributed to the decline of the western yellow-billed cuckoo include the loss and degradation of critical riparian habitat for nesting and pesticide exposure that has contributed to egg shell thinning.

Southwestern willow flycatcher (Endangered)

The breeding range of the southwestern willow flycatcher includes southern CA, AZ, NM; extreme southern portions of NV and UT, extreme southwest CO and western TX. It winters in southern Mexico and Central America. This species is listed in Alamosa, Archuleta, Conejos, Costilla, Dolores, Hinsdale, La Plata, Mineral, Montezuma, Ouray, Rio Grande, Saguache, San Juan, San Miguel counties in CO. While this species may or may not be considered aquatic-dependent, it is found most frequently in riparian habitats, especially in areas of dense willows. They also nest in non-native dominated vegetation such as salt cedar. The flycatcher feeds almost entirely on insects and usually breeds near open water, springs, marshy seeps or saturated soils. The major factor in the decline of the southwestern willow flycatcher is likely the alteration/loss of the riparian habitat necessary for the species.

In 2005, 737 stream miles or 120,824 acres of critical habitat were designated in AZ, CA, NM, NV, and UT, which included critical habitat designations in Washington County, UT. In 2013, the Service revised the critical habitat to 1,227 stream segment miles, with the lateral extent including the riparian areas and streams that occur within the 100-year floodplain or flood-prone areas encompassing a total area of approximately 208,973 acres. The revised critical habitat designations include portions of the Conejos and Rio Grande rivers in Alamosa, Costilla and Conejos counties, CO.

Least Tern (Endangered)

The least tern was historically abundant in the Mississippi River basin, but has been eliminated from most stretches of the Mississippi River and its tributaries. Alteration of natural river dynamics has caused unfavorable vegetational succession on river islands and banks, curtailing their use as nesting site by terns. Its breeding biology requires 1) the presence of bare or nearly bare alluvial islands or sand bars, 2) the existence of favorable water levels during the nesting season, and 3) the availability of food.

The least tern interior population is known to or is believed to occur in 25 counties in the South Platte River and Arkansas River basins. Adults arrive in Colorado in May and initiate nesting between late May and early July. Most young leave the nest by mid August, and most birds leave the state by mid September.³ Critical habitat has not been designated for the least tern.

Piping Plover (Threatened)

The breeding range of the piping plover extends throughout the northern Great Plains, the Great Lakes and the Atlantic Coast in the U.S. and Canada. The Northern Great Plains and Atlantic Coast populations of the piping plover are threatened species, whereas the piping plover in the Great Lakes area is an endangered species. Piping plovers breed in open, sparsely vegetated areas with alkali or unconsolidated substrates. The Great Plains population nests on barren sand and gravel shores of rivers and lakes. Piping plovers feed primarily on exposed beach or gravel substrates and eat insects, spiders, and crustaceans.

The decline of the piping plover populations is primarily related to commercial, residential and recreational development in and surrounding breeding habitat and hydro modifications that disrupt the natural disturbance cycle. Too much water in the spring will flood nests and too little water over long periods of time will allow the establishment of grasses and other vegetation, making habitat unsuitable for nesting.

Piping Plovers arrive in Colorado in late April, and initiate nesting in early May, although they may re-nest after failed nests through July. Most birds will leave the state by the end of September to spend the winter in the southern and southeastern states along the Atlantic and Gulf coasts. Critical habitat for the piping plover was designated in the September 11, 2002, Federal Register, and included designations in the states of Minnesota, Montana, Nebraska, North Dakota and South Dakota.

Terrestrial Species

The actions evaluated in this memo include revisions to the WQS for specific individual segments in Colorado. The EPA has considered each of the terrestrial species listed in Table 1 and concludes that none of the species have any part of their life stages as water-breathing organisms (aquatic) and for none of the species does a meaningful amount of their diet include aquatic organisms (aquatic-dependent).⁴ The EPA has determined that this action has no effect on the terrestrial species as set forth below.

³ Colorado Partners in Flight. 2000. Colorado Land Bird Conservation Plan
<http://www.rmbo.org/pif/bcp/phy36/shore/lete.htm>

⁴ Species are considered aquatic if at least one of their life stages is spent as a water-breathing organism (i.e., organisms whose respiratory oxygen is gained from that dissolved in the water column). Accordingly, organisms that have a water-breathing stage but later become air-breathers are treated as aquatic species. Species are considered aquatic-dependent if they are not water-breathing organisms, but if a meaningful amount of their diet includes aquatic organisms and/or habitat includes aquatic ecosystems. A terrestrial species, on the other hand, is a species that will have only limited exposure to "waters of the United States" (*Draft Framework for Conducting Biological Evaluations of Aquatic Life Criteria*, EPA, 2006).

None of the terrestrial invertebrate and plant species may be affected by the EPA's water quality standards action because they each occupy upland habitats, are not aquatic or aquatic-dependent, and therefore are not exposed to the aquatic resource. The EPA has determined that this action has **NO EFFECT** on each of these terrestrial plant and invertebrate species and they will not be addressed further in this memo.

None of the terrestrial mammal and bird species may be affected by the new or revised water quality standards because they are not aquatic or aquatic-dependent, and as such do not inhabit the aquatic system and would therefore not be exposed to any possible effects from these actions. The only possibilities for exposure to the effects of this action include potential alterations to the aquatic prey base that would be exploited by carnivores (lynx and owl) and potential concerns associated with bioaccumulative pollutants. The EPA has determined the new or revised water quality standards are protective of aquatic life. Since the new or revised water quality standards are not limiting to aquatic life, then the prey base available to these species would be unchanged. In addition, since none of these species rely on aquatic resources for a substantial portion of their diet, potential effects associated with bioaccumulative pollutants are not a concern. The EPA has determined that this action has **NO EFFECT** on each of these mammal and bird species and they will not be addressed further in this memo.

III. ACTIONS NOT SUBJECT TO ESA CONSULTATION

The EPA has concluded that its approval of the WQS revisions listed in Table 2 is not subject to consultation under Section 7 of the ESA. The basis for the EPA's conclusion is summarized in Table 2 and discussed below. Specific details on the revisions can be found in the enclosures for the action letter.

Table 2: EPA Approval Actions Not Subject To ESA Consultation.

CO Reg.	Description	EPA Action	Reason(s) Not Subject to ESA Consultation*					
			1	2	3	4	5	6
32	Antidegradation Designations			x				
	Recreation-based chlorophyll-a standard			x				
	Water Supply Classifications and Human Health-Based Standards			x				
	Temporary Modifications (Human Health)			x				
	Agriculture Numeric Standards (molybdenum)			x				
	Discharger-Specific Variances (human health)			x				
	Discharger-Specific Variances (aquatic life)					x		
	Revisions to Temporary Modifications (aquatic life)					x		
36	Antidegradation Designations			x				
	Water Supply Classifications and Human Health-Based Standards			x				
	Temporary Modifications (Human Health)			x				
	Agriculture Numeric Standards (molybdenum)			x				
	Rio Grande segments 4a and 7 - site-specific Changes to Aquatic Life Protection WQS					x		
*1) Disapproval action, 2) EPA has no discretion, 3) Requires additional rule change, 4) No occurrence of aquatic or aquatic-dependent listed or candidate species or no effect, 5) Non-substantive, 6) EPA is not acting								

Reason #1 - Disapproval Actions

There are no revisions that fit this category.

Reason #2 - Actions Where EPA Lacks Discretion

This category of revisions generally includes those new or revised water quality standards that do not pertain to protection of aquatic or aquatic-dependent species (e.g., human health, recreation, agriculture) or where the EPA otherwise lacks discretion (e.g., antidegradation). Pursuant to 50 CFR § 402.03, which limits Section 7 consultation requirements to actions over which “there is discretionary Federal involvement or control,” the EPA’s action on such revisions is not subject to consultation under section 7 of the ESA.

Antidegradation

The basis for the EPA’s conclusion that approval of antidegradation revisions is not subject to ESA consultation is discussed in “Antidegradation Policy Approvals and Endangered Species Act Consultations”, Memorandum from Geoff Grubbs, Director, Office of Science and Technology, to Water Management Division Directors, Regions 1 - 10, January 27, 2005.

WQS revisions in this category include:

- Fountain Creek segment 3a (certain streams) – changed from Use Protected to Reviewable
- Fountain Creek segment 4c – changed from Use Protected to Reviewable
- Alamosa River segment 9 and 10 – changed from Use Protected to Reviewable

Human Health (Recreation and Water Supply Water Quality Standards)

This category of revisions generally includes all revisions to designated uses that are directly related to protection of human health (e.g., water supply), all numeric criteria for the protection of human health, including those assuming human consumption of water and/or those assuming human ingestion of aquatic organisms, all revisions to recreation uses, and all revisions to the numeric criteria for the protection of recreation uses. The revisions in this category relate solely to the protection of human health uses. They are not material to the level of protection needed to ensure protection of listed or proposed, endangered or threatened species. Rather, the state/tribe has an independent duty to adopt WQS that would protect such species. Accordingly, in determining whether to approve or disapprove the revisions in this category under the CWA, the EPA’s discretion is limited to determining whether the revisions ensure protection of human health. Because consideration of effects on listed or proposed, endangered or threatened species is not within the EPA’s discretion, the EPA’s action on the revisions in this category is not subject to the requirements of section 7(a)(2) of the ESA. The EPA will continue to consider effects to listed species in the context of its review of standards adopted to protect aquatic life. EPA approval of human-health based water quality standards does not relieve the state/tribe of its responsibility to protect other uses (e.g., aquatic life), particularly where available information is sufficient to allow derivation of protective criteria.

WQS revisions in this category include:

- Application of a new recreation-based chlorophyll-a numeric standard to Upper Arkansas River segment 20b.
- Changes to water supply use classifications and numeric standards,
- The human health-based discharger-specific variances for sulfate (Lower Arkansas River segment 1a).
- Application of arsenic (water supply use) temporary modifications to various segments.

Agricultural Water Quality Standards

The EPA's approval of water quality standards that are directly related to protection of agricultural uses is not subject to ESA consultation. Agricultural water quality standards, including designated uses and narrative and numeric criteria, focus on the protection of irrigation and/or livestock watering and do not evaluate the sensitivity of aquatic or aquatic-dependent species. Rather, the State has an independent duty to adopt water quality standards that would protect aquatic life use designations. Accordingly, in determining whether to approve or disapprove the revisions in this category under the CWA, the EPA's discretion is limited to determining whether the revisions ensure protection of agricultural uses. Because consideration of effects on listed or proposed, endangered or threatened species is not within the EPA's discretion, the EPA's intended action on the revisions in this category is not subject to the requirements of section 7(a)(2) of the ESA. The EPA will continue to consider effects to listed species in the context of its review of standards adopted to protect aquatic or aquatic-dependent species.

WQS revisions in this category include:

- Application of a molybdenum standard of 150 µg/L to various segments for protection of agriculture uses.

Reason #3 - Actions That Require Additional Rule Change

There are no revisions that fit this category.

Reason #4 - No Occurrence of Aquatic or Aquatic-Dependent Listed or Candidate Species or No Effect

This category includes revisions to aquatic life standards for water body segments where listed species do not occur and critical habitat has not been designated. Accordingly, ESA-listed species or critical habitat will not be affected, directly or indirectly.

- Lower Arkansas River segment 1a – the temporary modifications for acute and chronic selenium were deleted, and discharger-specific variances for acute and chronic selenium were adopted (City of Pueblo).
- Lower Arkansas River segment 1b – a discharger-specific variance for chronic selenium was adopted (City of Las Animas).
- For Upper Arkansas River segment 8b, the temporary modification to the chronic cadmium standard was extended for additional 18 months.
- For Middle Arkansas segment 6b, the temporary modification to the acute temperature standard was deleted.
- Rio Grande segment 4a and 7 – Revisions to aquatic life protection numeric standards were adopted (based on additional data and an updated site-specific analysis).

Reason #5 - Non-Substantive Revisions

There are no revisions that fit this category.

Reason #6 - EPA is Not Acting

This category includes new or revised WQS where the EPA is not taking an action pursuant to CWA § 303(c) at this time. WQS revisions in this category include:

- Upper Arkansas River segment 20b – Application of a (110 µg/L) total phosphorus (TP) numeric standard based on the interim value for river/stream segments with a cold water aquatic life classification.

IV. ACTIONS APPROVED SUBJECT TO ESA CONSULTATION

By email dated March 11, 2019, the ESA Section 7(a)(2) informal consultation process with the Service was initiated for the revisions to Colorado's WQS. The EPA intends to approve the revisions identified below subject to completion of the ESA consultation.

- All changes to aquatic life protection standards, with the exception of those where EPA is taking no action, and those not subject to ESA consultation.

Biological Evaluation

It is important to understand that for its CWA Section 303(c) action the Region has taken a conservative approach in its identification of new/revised WQS revisions that are appropriate for ESA consultation. However, it is possible that, in some cases, the consultation process will reveal that EPA's approval has no effect on listed species or critical habitat. In other words, as a general matter, EPA's biological evaluation will evaluate in greater detail the revisions to WQS and how they may affect listed species or their critical habitats.

V. CONCLUSION

For all of the reasons discussed in this memorandum, EPA believes its approval of certain new or revised elements of Colorado's WQS subject to the outcome of ESA Section 7(a)(2) consultation is consistent with Section 7(d) of the ESA. As described above, EPA also believes that its approval of other elements of Colorado's WQS is not subject to ESA Section 7(a)(2) requirements (Table 2).

